ABSTRACT OF THE DISCLOSURE

A power-save QSTA notifies an Access Point (AP) that its operating in a automatic power-save delivery (APSD) mode and negotiates a periodic wakeup schedule and a scheduled startup time with the AP. Wakeup times are synchronized with the 802.11 Timer Synchronization Function (TSF). The AP automatically sends frames to the QSTA when it determines the QSTA is in an awake state, otherwise downlink frames are buffered. The AP uses a combination poll+EDCF access method wherein at the start of each wakeup period the AP sends a poll to the QSTA, the poll having a flag that indicates to the QSTA if the AP has a downlink fame buffered for the QSTA. In addition, a Proxy ARP Server in an AP maintains IP/MAC bindings for associated clients so that when the AP receives a proxy ARP request for a client, the AP may respond for the client.